CADUCEUS

a museum quarterly
for the health sciences

Winter 1986

**Caduceus:
a museum
quarterly for
the health
sciences**

Volume II • Number 4 • Winter 1986
Published by the
Department of Medical
Humanities

Board of Editors

Glen W. Davidson	Editor
Linda Keldermans	Associate Editor
Phillip Davis	Assistant Editor

Staff

Lisa Dziabis	Curator, The Pearson Museum
M. Lynne Cleverdon	Business Manager

Subscription Rates—

The subscription rate per year for *Caduceus* is as follows: $30.00 for one year (4 issues) and $54.00 for two years (8 issues). International subscribers should add $2.50 to regular subscription prices to cover postage and handling. A single copy of *Caduceus* is $10.00.

Advertisements—

Advertisements for publication in *Caduceus* are accepted as space allows. Interested parties should submit final ad copy and stipulate as to whether they wish full- or half-page coverage. The price per ad, which includes all design and camera work, is $100 for a full-page ad and $65 for a half-page ad.

All subscription and advertisement communications should be addressed to the
Department of Medical Humanities
Southern Illinois University
School of Medicine
P.O. Box 3926
Springfield, Illinois 62708
Phone (217)782-4261

Copyright ©1986 The Board of Trustees
of Southern Illinois University

ISSN No. 0882-6447

CADUCEUS

a museum quarterly
for the health sciences

BOARD OF ADVISORS

Class of 1988

Audrey Davis
National Museum of American History
14th Street & Constitution Ave., NW
Washington, DC 20560

Philip A. Metzger
Linderman Library 30
Lehigh University
Bethlehem, PA 18015

Nancy Zinn
The Library
University of California
San Francisco, CA 94143

John E. Senior
Bakken Library
3537 Zenith Avenue, South
Minneapolis, MN 55416

Ron Numbers
Department of the History of Medicine
1300 University Avenue
University of Wisconsin
Madison, WI 53706

Class of 1987

James F. Craig
Museum of the Baltimore
College of Dental Surgery
University of Maryland
at Baltimore Dental School
Baltimore, MD 21201

Patsy Gerstner
Howard Dittrick Museum of
Historical Medicine
Cleveland Health Sciences Library
Cleveland, OH 44106

Diana Lewis
Museum of Medical Science
Houston, TX 77288

Mary Ellen McElligott
Illinois State Historical Library
Springfield, IL 62706

John Parascandola
History of Medicine Division
National Library of Medicine
Bethesda, MD 20209

Portrayal of Pathological Symptoms in Pre-Columbian Mexico

by Hasso von Winning

Cross-eyed dignitary. 16 cm high, red and white on orange. Late Classic Maya Jaina A.D. 800-900. Private collection. (Photo courtesy of Museum für Völkerkunde, Munich, and Stendahl Galleries, Los Angeles.)

Portrayal of Pathological Symptoms in Pre-Columbian Mexico

The portrayal of the human body is the dominant theme in the art of Pre-Columbian Mexico, a period which spanned the three millennia preceding the Spanish Conquest in 1521. Countless terra cotta figurines were hand-modeled by early village cultures and the invention of the ceramic mold in the third century facilitated their mass production. As the head was considered the seat of life in these ancient cultures, elaboration of facial features was emphasized in art. The figuration ranges from schematic and conventionalized to naturalistic expression, with rare true portraits of specific individuals.

Mexico, with its varied climatic zones ranging from temperate high plateaus to humid lowlands, has been divided into archaeological regions (see map). These include the Maya region, which extends also over Guatemala, Belize, and parts of El Salvador and Honduras.

In view of the basic similarities among the cultures of Mexico and parts of Central America, this vast area is known anthropologically as Mesoamerica. Its major characteristic traits include a writing system, ritual and solar calendars, a complex pantheon with its institutionalized priesthood, religious architecture and sculpture—none of which was shared by the neighbors to the north and to the south of its limits.

Among the successive regional cultures of Mesoamerica, only a few concerned themselves intensively with the portrayal of disease symptoms and deformities. Although some of these features are readily recognizable, caution is indicated so as not to confuse them

with stylistic pecularities. For this reason diagnoses of the pathological symptoms in figurative art can be misleading because such diagnoses can be based only on external appearances. (Alas, the patient is not available for examination.) For instance, a female figure with distended body may indicate pregnancy, obesity (not necessarily shown in the extremities), or fluid in the abdomen. As I am not trained in medicine but in archaeology, specializing in Pre-Columbian art history, I limit my observations here to descriptions of abnormal features and point out when these are dictated by style conventions.

In practice the Aztecs and their predecessors, as well as the Maya, must have acquired a good knowledge of anatomy from the human sacrifices which were practiced by the priests since the beginning of our era, albeit on a much smaller scale than in late Aztec times. Ritual decapitation, extraction of the heart, and disembowelment permitted insight into the human body.

SOURCES ON ABORIGINAL MEDICINE

Our knowledge of the attitude of the natives toward illness, and the empirical remedies applied by the various medical specialists, is derived exclusively from sixteenth- and seventeenth-century Spanish manuscripts which refer mainly to the Aztecs at the time of European contact in 1519.

Foremost among these sources is the encyclopaedic treatise on Pre-Hispanic and early colonial ritual and religion entitled *Florentine Codex: General History of the Things of New Spain,* written in 1547-1562 by Franciscan friar Bernardino de Sahagún.[1] With the aid of educated natives and elderly sages, Sahagun compiled their answers to his questionnaires in Náhuatl (the language spoken by the Aztecs), and translated most of them into Spanish. They are now available also in English.[2] To assure the accuracy of his descriptions of illnesses and medical practices, Sahagun had his original version revised by eight Aztec physicians and supplemented by another team of seven native doctors who also provided a descriptive list of the parts of the human body. The latter is mainly of linguistic importance since Sahagun intended to include the native terminology in a dictionary.

At the time of Sahagún's investigations a renowned native physician, Martín de la Cruz, compiled an herbal which was translated from the now lost Náhuatl version into Latin by his Indian colleague, Juan Badiano. It was published in 1552 with the title *Libellus de Medicinalibus Indorum Herbis*[3] and describes the therapeutic qualities of plants, animals, and minerals according to ancient beliefs. It is beautifully illustrated and, although tinged by European influence, it provides insight into Pre-Hispanic medical concepts.

Shortly thereafter this subject was studied by Francisco Hernández, whom Philip II had commissioned as "Surgeon General" for all the Spanish Indies. Hernández traveled widely in New Spain between 1571-1577, gathering specimens. But Hernández' valuable material and information, published in his *Historia Natural de Nueva España*[4] was met with disapproval in Spain because his scientific approach was ahead of his time.

In 1629 the secular priest Hernando Ruiz de Alarcón completed a most remarkable treatise on the *Superstitions of the Natives of This New Spain*.[5] As an ecclesiastical judge, Ruiz de Alarcón had been commissioned to investigate and eradicate pagan customs, idolatries and superstitions, and he recorded the incantations used by sorcerers, diviners and medical specialists. His work is a primary source on the *nahualli* (animal alter-ego) concept, "soul-loss" illness, divination and hallucinogenic plants.

MEDICAL THEORY

The historical traditions at the time of the Spanish Conquest indicate that what is known in anthropology as the religious aspects of a culture were highly developed. These aspects involved a formidable pantheon of individualized deities, a hierarchical priesthood that organized the elaborate rituals, theological and philosophical speculation, magic, divination and shamanism. Religion pervaded every phase of daily life. The gods had to be placated to insure their benevolence through offerings of incense and sacrifices such as blood-letting from the ear, tongue or penis.

Accidents, illness and death were considered to have been caused by those deities who were in charge of worldly affairs and certain

major and minor gods were allegedly responsible for specific maladies. These gods were also benevolent, however, and concerned with the comfort of the afflicted and their destiny after death. Toci (meaning "Our Grandmother"), a supreme goddess, was the patroness of the curers and midwives. Those who perished by drowning or by lightning were rewarded in a terrestrial paradise called the Tlalocan, under the aegis of Tláloc, the rain god.

THE AZTEC PHYSICIAN

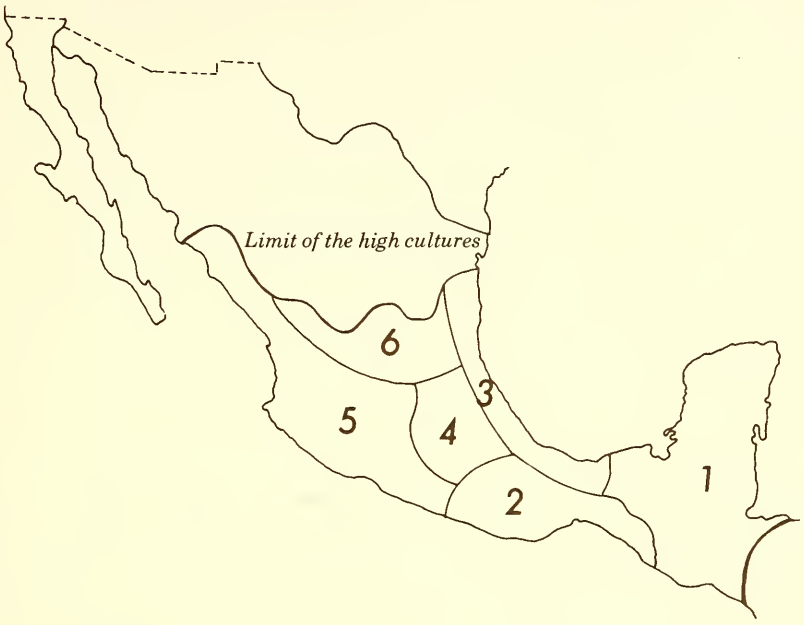
Sixteenth- and seventeenth-century sources, whether written in Náhuatl or in Spanish, indicate that the medical profession was specialized and highly respected. In the quaint, repetitive style of the native sages, Sahagún recorded that "the physician is a wise man, a person of trust, deserving credibility, deserving faith . . . he is reflective, deserving to be considered a physician. He reassures, calms, helps."[6]

Sahagún's outline of the qualities of the good and of the bad physician is even more revealing:

> . . . The good physician is a diagnostician, experienced, a knower of herbs, of stones, of trees, of roots. He has [results of] examinations, experience, prudence. He is moderate in his acts. He provides health, restores people, provides them with splints, sets bones for them, purges them, gives emetics, gives them potions; he lances thim [with obsidian knives], makes incisions in them, stitches them, revives them, envelopes them in ashes.

On the other hand, Sahagún expresses a definitely negative opinion of the bad physician, calling him a "fraud, a half-hearted worker, a killer with his medicines, a giver of overdoses, an increaser of sickness, who causes one to worsen. He kills with his medicines... he seduces women, he bewitches them."

It is therefore understandable that the Spanish invaders preferred to be treated by Aztec physicians rather than by their own doctors, who practiced Hippocratic and Galenic medicine.



ARCHAEOLOGICAL REGIONS OF MEXICO

1 Maya region
2 Oaxacan region
3 Gulf coast region
4 Central highlands
5 Western Mexico
6 Northern region

after Piña Chan 1960.

A distinction is also made between physicians and bad wise men. The latter are "the sorcerers, soothsayers and medicine men who are considered stupid physicians." Nevertheless, a sorcerer and soothsayer can be considered a wise man if he is serious—if "he is the owner of books" (the pictorial manuscripts from which he interprets the good and bad omens). The bad soothsayer "is a deceiver, a mocker, a hypocrite. He confounds, beguiles, deceives others."

The Náhuatl term for a physician, *ticitl*, is translated in Molina's sixteenth-century Náhuatl-Spanish dictionary[7] as "doctor, prognosticator or diviner" (*medico, agorero o echador de suertes*), an explanation which seems to reflect the clergy's suspicions of native heretical customs. Yet these practitioners were specialists of separate branches, using different methods, and they all contributed toward the health care of the people.

MEDICAL PRACTICES

The methods for alleviating illness and pain were derived from a combination of religious and cosmological concepts, magic and observation of natural causes. The belief in a divine causality of a malady, provoked by an offense on the part of the patient, required a propitiatory rite to obtain the deity's pardon. If a malady involved "soul-loss," an agreement had to be reached so that the god who had captured the soul would release it to be restored to the patient.

A chapter in Sahagún's *Florentine Codex* lists the remedies for various maladies.[8] Most of these call for the infusion of numerous herbs and other ingredients. From our point of view some of these remedies are sensible, others are quite ludicrous. I quote some of the briefer passages:

> *Ear ulcers:* "A few drops of liquid rubber are placed inside the ear."
>
> *Catarrh*: "As its cure, green herbs named *yecuxoton* and named *icuexo* are taken, inhaled; or small tobacco is inhaled; and the gullet is massaged, and there is vomiting. And one is not to drink cold things; only tepid

[or] hot things is one to drink [and] eat. And one is to take care not to come upon, not to encounter, the cold. Also one is not to expose himself to the sun."

Films over the eyes: "Drops of lizard excrement with lampblack are applied, and [drops of] copper rust with tomato."

Abscess of the tongue: "The swelling is to be pierced, lanced. Blood or pus will come out. And a salted thread is inserted where it is pierced. And one is to drink [an infusion of] the so-called *iztac quauitl* wood. This will expel the infection. One will urinate bloody, yellow urine, or kidney stones, or purulent urine."

Coughing: "As its cure, there is to be vomiting, there is to be massaging of the throat. One is to drink [an infusion of] *tlacopopotl* root, [or] lime water mixed with chili, [or] the water of cooked wormwood; [or] one is to drink [an infusion of] the root [of an herb]."

Colic: "Flaked whitewash [and] a little saltpeter, with liquid rubber and chili, are worked to the consistency of potter's clay, into a suppository inserted into the rectum. It is expelled from the rectum. It eliminates all one's food which is within."

It is interesting that acupuncture, practiced by native doctor-sorcerers, is mentioned in Alarcón's treatise. Translators Michael Coe and Gordon Whittaker observe that "there is no European tradition for this treatment, and unless it arrived in Mexico from the Orient via the Manila Galleon (which we doubt), it must be aboriginal. It is prescribed for pains in the abdomen and in the back."[9]

Ruiz de Alarcón also mentioned that massage was one of the most frequently applied remedies and that it was highly effective. Fever was thought to be caused by interior heat which could be remedied by a diuretic, a purgative, or a digestive. In particular, the effectiveness of curative plants, taken as an infusion or enema was

well known. The use of syringes for clysters is documented archaeologically in depictions on Mayan painted vessels and the discovery of a pair of crude ceramic syringes.

In sum, medical practices involved much religion and magic, but also considerable sound empiricism—probably more than in contemporary European medicine.

MAGICAL MEDICINES

Certain sacred medicines, such as tobacco, morning-glory seeds and the "buttons" of the peyote cactus, were used both in religious ceremonies and also for medicinal purposes. Numerous varieties of tobacco were grown. A bottle-gourd filled with powdered tobacco was the badge of priests and native doctors, who carried it suspended from the belt. The smoke of dried tobacco leaves, rolled into a cigar, was inhaled. Its therapeutic effect for various disorders is described in Hernández' treatise mentioned earlier. The exhaled smoke was applied for fumigation, more likely in a ritual context. Perhaps most importantly, it was believed that tobacco was pleasing to the gods and that it had magical powers.

The 1552 herbal of Juan Badiano describes tobacco as an efficient medicine for "rumbling of the abdomen" and gives the following prescription: "For one whose bowels are murmuring because of diarrhea, make a potion, let him take it with an early clyster of the leaves of [several herbs] ground in bitter water and ashes, a little honey, salt, pepper, and [stone] alectorium, and finally add *picietl* [tobacco]."[10]

Coe and Whittaker explain that the seeds of the morning-glory (*Turbina corymbosa*) were ground and ingested with water by the *ticitl* or sorcerer, so as to cause intoxication and visual hallucination.[11] In this way the *ticitl* was able to determine the cause of illness when witchcraft was suspected. Peyote, like *ololiuhqui* (the morning-glory seeds) had, and still has, strong ritual significance. Both medicines were given through the use of enemas to cure fevers.

During the colonial period the Spanish clergy was aware of the hallucinogenic effects of these plants, as well as of the psychoactive mushrooms, and forbade their use. For this reason the natives, who considered them sacred, were reluctant to divulge their knowledge about them.

* * *

By far the most interesting and varied repertory of disease portrayals is evident in the large, hollow ceramic figures from West Mexico—the area of the modern states of Colima, Jalisco and Nayarit.* Human and animal effigies have been retrieved in large numbers mainly from looted tombs, accessible through a deep shaft which had been filled with dirt after burial. There were no indications on the surface except for an occasional ring of stones. The shaft tomb figures, which were to represent companions of the dead, can be dated approximately from 100 B.C. to 400/500 A.D. These figures portray males and females in various poses and activities, as well as hunchbacks and individuals with various pathological symptoms.

All figures from Colima, diseased or not, have a stylistic peculiarity in the form of a spout or opening on top of the head or in back. This opening also served as a venthole so that the steam generated from water in the clay could escape during firing. The spout does not seem to indicate that these figures were used as containers for ordinary household use.

---

*In view of the many forgeries in Pre-Columbian art (some of which are deceptively well made), I have taken special care to inspect all the objects illustrated here and ascertained their genuineness.

THE FIGURES

Hunchback figures (Figs. 1-5). Among the figures of deformed or diseased persons, those of hunchbacks predominate by a wide margin. Three types can be distinguished: (1) those with rounded or pointed humps (Figs. 1a and 1b); (2) those showing bilateral swelling accentuated by a vertical groove (Figs. 2a and 2b); (3) those with a hump on one side only (Fig. 3).

Exceptional is the female hunchback from Jalisco (all the others are males or show no sex) whose spine protrudes (Fig. 4a). She holds a stick, probably to facilitate ambulation. Another rare specimen is the small stone sculpture in the Mezcala style of Guerrero, in which the hump is clearly discernable (Fig. 4b). The Mezcala stone figures are distinguished by their abstract carving technique, which expresses the human figures by means of deep grooves. The hump is the only pathological feature in this sculpture.

With few exceptions hunchbacks are shown in a seated position which makes the hump more obvious. Some of them have a horn which perhaps denotes their special status as shamans (Fig. 1a; 5b).

A number of Colima hunchbacks are dwarfs displaying additional symptoms such as an asymmetrical face (Fig. 5a); or missing hands—although this may be a stylistic convention. Blindness, a protruding mouth, swelling at the elbows or saddle nose are also common.

The hump on the seated dwarf (Fig. 5c) has a large orifice so that the torso resembles a jar. The method of modeling human effigies onto a jar has been applied frequently in various types of figures and in different cultures. Noteworthy are the recessed nose bridge in this figure, the protruding lips and bulging shoulder muscles. The perforated eyes are unusual.

The relative high frequency of hunchback figures in West Mexico suggests that the persons portrayed had held a special position in the social order and does not necessarily imply that an unusually large number of individuals were thus afflicted.

Fig. 1a. Hunchback with protrusion on the spine. 24 cm high, red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 1b. Hunchback holding a bowl. 30.5 cm high, black-on-red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 2a. Hunchback with bilateral hump holding a bowl. 18.5 cm high, buff, white and red. Jalisco. Private collection. (Photo courtesy of the author.)

Fig. 2b. Hunchback with bilateral hump smoking a cigar. 37 cm high, buff with traces of black. Private Collection. (Photo courtesy of Sidney Newman.)

Fig. 3. Hunchback with excessive hump on right side. 35 cm high, brownish-red with calcareous deposits. Formerly in collection of Stendahl Galleries, Los Angeles. (Photo courtesy of the author.)

Fig. 4a. Female hunchback holding a staff, (perhaps to assist in ambulation). 31.5 cm high, gray. Jalisco. Private collection. (Photo courtesy of the author.)

Fig. 4b. Hunchback with hump on right side. 15.5 cm high, mottled greenstone. Style of Mezcala (Guerrero), c. 200-1000 A.D. Private collection. (Photo courtesy of the author.)

Fig. 5a. Hunchback dwarf drinking from a bowl. 24 cm high, red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 5b. Hunchback dwarf with horn. 18 cm high, red-on-buff. Colima. Formerly in collections of Stendahl Galleries, Los Angeles. (Photo courtesy of the author.)

Fig. 5c. Hunchback dwarf with large orifice in back and perforated eyes. 39 cm high, red and brown. Colima. Collection from Stendahl Galleries, Los Angeles. (Photo courtesy of the author.)

Representations of persons with a hump range from Tennessee and Arkansas to South America. They are most frequent in Mesoamerica, southern Central America, and Peru. Their temporal range in Mesoamerica is from the middle of the first millennium B.C. to the Spanish Conquest.

In general, hunchbacks do not personify deities or their priests, with the exception of certain Zapotec urns and isolated effigies from other regions. The diseases causing deformation of the spine are tuberculosis, rachitis, syphilis, arthritis, and perhaps infantile paralysis if this disease existed in Pre-Columbian America. Among people who wore scant clothing, the misshapen back must have been particularly obvious and would have aroused curiosity.

The Spanish conquistadors were impressed by the coincidence that the court of Moctezuma included hunchbacks of very small stature who were employed as jesters, a custom that was widespread in Europe among the royal households of the Middle Ages and the Renaissance. Cortés and other Spanish chroniclers reported that in Mexico such persons were kept for the pleasure of persons in authority.

In both the New and the Old World, misshapen individuals were held in awe because their deformities were associated with the possession of occult powers. This belief, dating back to antiquity, had not been changed by the advent of Christianity.

At the same time hunchbacks were considered bringers of good luck, a fact which accounts for their employment at the royal courts. Even in present-day Mexico, vendors of lottery tickets are often hunchbacks and it is possible to see a person buying a ticket from one of these vendors discreetly touching his hump, as a sign of luck.

The special status of hunchbacks can also be attributed to psychological reasons, as Sigvald Linné pointed out in his work, *Humpbacks of Ancient America*: "They have an inferiority complex coupled with a pronounced self-conceit which produces a comical impression. Their comparative innocuousness in a physical sense is frequently coupled with highly developed mental abilities."[12]

Because many figures depict more than one symptom of illness, I have chosen to deal first with the head, and then with the torso and legs.

Figures with swollen cheeks (Fig. 6). As her facial expression suggests, a somewhat clumsily modeled female figure from Nayarit holds her hand to a swollen cheek (Fig. 6a). Her nose is virtually missing. The large disks on her ears are ornaments.

A figure in the Chinesca substyle of Nayarit shows a swelling on both cheeks (Fig. 6b). Figures in this art style are dubbed "Chinesca" because collectors saw in them an oriental appearance. (This similarity, however, does not mean that they demonstrate a Chinese influence.) The young male here has closed eyes, which may indicate blindness or death.

Fig. 6a. Female with swollen cheek. 9.5cm high, white and red on brown. Nayarit. Private collection. (Photo courtesy of the author.)

Fig. 6b. Male with swollen cheeks and closed eyes wears a nose plug and goatee. 21 cm high, red-on-cream; black spots are deposits of manganese dioxide. Chinesca style of Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Figures with closed eyes (Fig. 7). In figures where the hands are extended in an attempt to move about safely, closed eyes may indicate blindness. That the arms may be foreshortened is a style characteristic of Colima and does not necessarily indicate a deformity. The seated male shown here wears a necklace as a rank insignia, an ornamentation appearing also in non-diseased sculptures (Fig. 7a). The knobs on the upper arms are scarifications which occur on many types of West Mexican figures and have no special significance.

Fig. 7a. Hunchback with closed eyes, scarifications on arms. 35 cm high, red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Of particular interest is the male figure with thick eyelids, heavy cheeks and a protruding navel (Fig. 7b). The male, with a large penis—which is unusual except in certain Colima style erotic figures—holds a small ball in his hand with only three fingers. As the other hand and the toes are not well defined, the potter apparently was not concerned with a naturalistic rendering of hands and feet. The raised right arm is extended horizontally around the back of the head; it is far too long. This particular figure and a female companion (not illustrated) are in the style of Jalisco, where it is common to find pairs of male and female figures together—possibly made by the same potter and placed in the same tomb. (Also of interest in this category is Fig. 36, shown on page 72.)

Fig. 7b. Male with closed eyes, protruding navel, holding a ball. 24.5 cm high, red- on-buff. Jalisco. Private collection. (Photo courtesy of the author.)

Figure with unusually large eyes (Fig. 8). The protruding eyes of a seated female from Jalisco are possibly a disease symptom; she also has very large rounded shoulders and breasts, and a distended stomach. Large eyeballs with thick lids are one of the stylistic peculiarities of Jalisco shaft tomb figures, but on this female the trait is definitely exaggerated.

Fig. 8. Kneeling female with large protruding eyeballs. 27.5 cm high, red-on-buff, black pupils. Jalisco. Private collection. (Photo courtesy of the author.)

Asymmetrically modeled eyes (Fig. 9) are evident in a number of figures, but especially on a unique clay mask from Tlatilco (Valley of Mexico, c. 1000-800 B.C.). The nose is exceptionally broad and seems to lack the bone support.

Heads with two different eyes occur on small clay and stone sculptures that show half of the face next to a skeletal one and do not concern us here because they represent the life-death dichotomy.

Fig. 9. Face mask, one eyelid swollen, sunken nose bridge. 11 cm. high, buff. Tlatilco, Valley of Mexico, c. 1000-800 B.C. Private collection. (Photo courtesy of the author.)

Figures with one eyeball hanging from the optic nerve over the cheek (Fig. 10). These faces also have religious connotation. One particular head from Veracruz (1000-1400 A.D.) shows a distorted mouth. (Examples of what seems to be facial paralysis are discussed below.) In the pictorial manuscripts painted before the Spanish Conquest[13] and in ceramic relief sculpture, a hanging eye is an attribute of deformed or sick deities, in particular Nanauatzin, the syphilitic god and deity of the sick and deformed. (See Fig. 35 on page 66.)

Fig. 10. Head of a large figure with right eye extruded and hanging from optic nerve, distorted mouth. 23 cm high, red. Veracruz, c. 1000-1400 A.D. Private collection. (Photo courtesy of the author.)

Self-sacrificial rites generally consisted of drawing blood from the ear or penis (where blood flows more profusely). Mutilation of the eye was also a penitential practice, however. These Late Postclassic rites have their roots in earlier cultures, as exemplified in the head from Veracruz. An extracted eye with a "stem" symbolizes the destruction of life, analogous to sacrificial heart extraction.[14]

Figures with collapsed nose bridges (Fig. 11). Perhaps as a result of syphilis—a disease now recognized to have existed in some form in the New World before arrival of the Spaniards—some figures have recessed nose bridges (Figs. 11a and 11b).

Fig. 11a. Dwarf with sunken forehead, saddle nose and split septum. 35.5 cm high, buff. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 11b. Nayarit female with collapsed nose bridge. 35.5 cm high, red, white and orange. Nayarit. Private collection. (Photo courtesy of the author.)

Figures with "death bubbles" (Fig. 12). Several seated male figures from Jalisco, but only one from Colima, have a round object between the lips which is not a tongue. Physician Abner J. Weisman has illustrated four of these figures with what he calls a "death bubble," which may indicate "imminent death due to pulmonary edema, emphysema and respiratory failure. The death bubble is the possible manifestation of frothing in terminal pulmonary disease."[15] The posture of these figures suggests pain—perhaps the reason one figure has his eyes closed (Fig. 12a). A second face shows narrow eye slits, a stylistic pecularity of figures which have tasseled ear pendants (Fig. 12b). These figures are of a regional type from San Juanito, Municipality of Antonio Escobedo, in the Magdalena Basin of Jalisco.[16]

Fig. 12a. Male with wad between lips ("death bubble"). 25cm high, brown. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 12b. Male with a wad between lips and distended abdomen. 42 cm high, red-on-buff. Jalisco. Private collection. (Photo courtesy of Sidney Newman.)

Figures with vertical lips (Fig. 13). On one Nayarit female the lips are distinctly modeled vertically (Fig. 13a). Two sexless Chinesca figures, possibly hunchbacks (the ribs are accentuated by white lines on red), show the same feature (Fig. 13b). The latter have deeply set eyes and puffy cheeks. All three figures have a crescentic "nose clip" attached to the septum. Such nose ornaments are common but they must have impaired breathing. The thin arms are likewise a frequent trait; they contrast with the thick legs. It has been suggested to me that these figures represent the whistling face syndrome.

Fig. 13a. Female with vertical lips (Whistling face syndrome?). 29cm high, red, white and yellow. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 13b. Pair of sexless figures with vertical lips and protruding ribs in back. Each one is 15.5 cm high, red and yellow. Chinesca type of Nayarit. Private collection. (Photo courtesy of the author.)

Figures with distortions of the mouth and ritual mutilation of the lips (Fig. 14). A female figure shows a good example of an artificially deformed mouth (Fig. 14a). Paired or multiple incisions are noticeable on the cheeks. One male figure shows a distorted mouth (Fig. 14b), while another with artificially deformed lips is playing a rasp (Fig. 14c).

This peculiar form of mutilation of the mouth was practiced in Nayarit, apparently as a penitential rite. The result is evident only on shaft tomb figures from that state; documentary information on the custom is nonexistent. A rare figurine group in the Diego Rivera collection (not shown here) has a rod inserted through the protruding lips which connects four standing individuals, two males alternating with two females standing side by side.[17]

Fig. 14a. Female with artificially deformed mouth and deep scars on cheeks. 35.5 cm high, red-brown and black. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 14b. Male with distorted mouth. 37 cm high, black and red on buff. Jalisco. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 14c. Male with artificially deformed lips, playing a rasp. 21.5 cm high, black and white on buff. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Figures representing distortions diagnosed as facial paralysis (Fig. 15). Mexican archaeologist Eduardo Matos Moctezuma published a short monograph on examples of ceramic and stone sculptures.[18] His work merits mention here because the precise provenience and date of the objects are known. Several medical doctors supplied the diagnoses for these figures, which ranged from 500 B.C. to 1200 A.D. The figure shown here indicates left-sided paralysis sculpted on a yoke fragment from Veracruz, around 500-700 A.D. Yokes carved of hard stone, weighing some forty pounds, were used in the ritual ball game. Such a portrayal may have had some religious connotations. The tongue shows incisions on one side, the meaning of which is not known.

It seems that left-sided paralysis is more commonly represented than that of the right side. In general, the left side had, and still has, a sinister connotation in the Old World and also in Pre-Columbian Mesoamerica. Perhaps for this reason persons afflicted on the left half of the face were singled out for portrayal in sculpture to allay their evil influence.

Fig. 15. Head on the round center of a stone yoke fragment. Approximately 12 cm high. Veracruz, c. 500 A.D. Collection in Museo Nacional de Antropología, Mexico City. (After Matos Moctezuma, plate 6.)

Seated male figures hiding their faces behind crossed arms (Fig. 16). This male figure from Nayarit shows no apparent illness symptoms except that the mouth is wide open, suggesting that the individual has trouble breathing. The legs are elongated to support the arms. In back of the neck is a spout. The black spots are manganese dioxide deposits, which accumulated on the clay surface after many centuries of contact with the soil of a shaft-and-chamber tomb. Collectors tend to call a figure of this type "The Thinker," alluding to Rodin's famous sculpture, but obviously it represents a sick person.

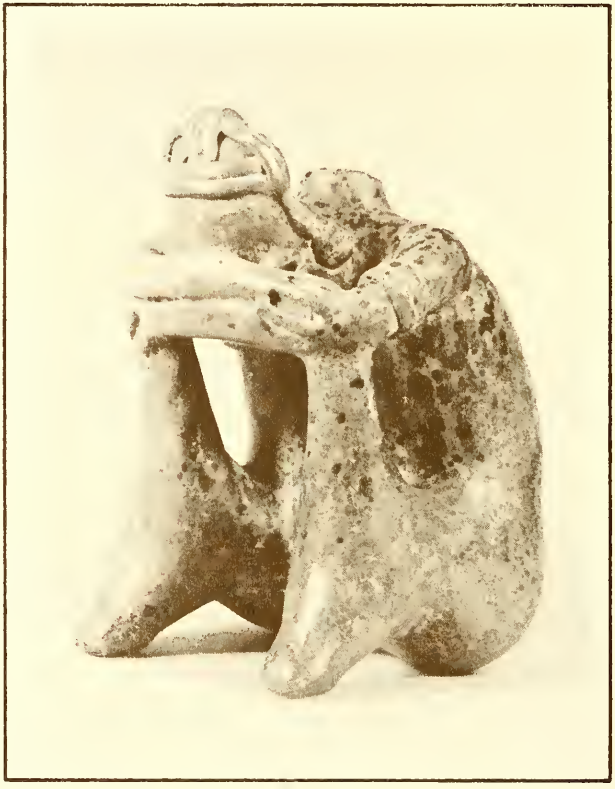


Fig. 16. Male resting his head on crossed arms, with wide open mouth. Spout in back. 14.5 cm high, red with black manganese dioxide deposits. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Figures with deformation and paralysis of the legs (Fig. 17). In other cultures outside the western area of Mesoamerica, human hands were sculpted and perhaps represent severed limbs. The Jalisco hunchback with paralyzed legs is portrayed using pads under his hands for locomotion (Fig. 17a). He carries a bag or a bowl suspended from a cord on the back. Knobs on the shoulder of this figure are decorative. The second figure is of a middle-aged female from Jalisco with very thin, apparently abnormal, legs which contrast sharply with her large torso (Fig. 17b). Her arms are modeled disproportionately long and thin so that she can place her hands on her legs. The eyes are half closed and suggest resignation to her condition.

Fig. 17a. Hunchback with paralyzed legs is shown using pads on both hands for ambulation. 24 cm high, red. Jalisco. Private collection. (Photo courtesy of Sidney Newman.)

Among the numerous wall paintings at Teotihuacan—the corpus consists of some 500 images with religious and symbolic representations—there are only two similar ones that portray deformed persons. The one shown on the next page is repeated on the other side of the entrance wall to a building (Fig. 17c). A resemblance with the Aztec deity Xolotl, descending into the underworld and death, has been suggested here.[19] However, Xolotl was not a member of the Teotihuacan pantheon, which preceded the Aztec deities by about six centuries.

Fig. 17b. Female with deformed legs and distended abdomen. 32 cm high, red-on-buff. Jalisco-Colima border region. Private collection. (Photo courtesy of the author.)

Fig. 17c. Mural painting of a male with deformed legs and elaborate speech scroll. Teotihuacan, Atetelco White Patio, c. 600 A.D. (After Séjourné, 1956, fig. 55.)

Figures with "saber-shins" (Fig. 18). The sharp edges modeled deliberately on both legs of a Colima figure with bilateral hump have been diagnosed as symptomatic of syphilis (Fig. 18a). It is now generally agreed that some form of syphilis existed in the New World before the arrival of the Spaniards. The same phenomenon occurs on a tall, hollow figure from central Veracruz (c. 600-900 A.D.), which also shows slanted and exaggerated toes (Fig. 18b). A knob between the nipples may have been some sort of ornament that has broken off. The holes on the head are intended for insertion of flowers or feathers; such perforations are not uncommon in this category of ceramic sculptures. It was customary in ancient Veracruz to ritually break up large ceramic figures before burial as a tomb offering. This figure has been mended and partially restored but the unusual features of the legs are original. According to Cabot and Adams, forward curving of the anterior border of the tibia, sometimes with nodular thickening due to periosteitis, is not uncommon in congenital and in late, acquired syphilis.

Fig. 18a. Hunchback with bilateral hump and saber shin on both legs. 30 cm high, brown. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Fig. 18b. Tall male figure with saber shins. 87 cm high, buff. Veracruz, c. 600-900 A.D. Formerly in the collection of Eli Cohen. (Photo courtesy of the author.)

Figures with exaggerated hands (Fig. 19). The seated figure with disproportionately large hands and protruding toes is also unique. Its body with a hump is stylized to form a container and a spout is on the head. A horn on the forehead perhaps characterizes this individual as a shaman. The figure may indicate pathological symptoms, or it may be one of the grotesque ceramic sculptures found in West Mexico portraying phantastic beings. When I photographed this figure, the late Eli Cohen, M.D., who once owned it, suggested that the spider fingers (indicative of acromegaly) perhaps resulted from excessive secretion of the pituitary gland.

Fig. 19. Male with enlarged hands (acromegaly?); hump stylized to form a container. 20.5 cm high, brown. Colima. Formerly in the collection of Eli Cohen. (Photo courtesy of the author.)

Male figures with distended abdomens (Fig. 20). First is shown a Classic Veracruz figure (c. 300-600 A.D.), portraying a gesturing male with enlarged penis and a grotesque face (Fig. 20a). He may also have swollen eyes. He stands with the aid of a clay support attached in back. Black bituminous paint highlights the moustache (seepage from underground oil deposits which since the turn of the century are being exploited commercially, provided the ancient potters in Veracruz with bitumen). The loincloth is in a vertical position and has two knobs (perhaps indicating the scrotum). This sculpture is a whistle-figurine with a mouthpiece behind the right arm; the cavity in the abdomen serves as a sound chamber. A particularly obese figure holding hands behind a slightly tilted head seems to express pain (Fig. 20b). A third figure not illustrated has a distended stomach and a swelling on either side of the spine.

Fig. 20a. Male with distended abdomen and large penis. 17 cm high, brown and black bituminous paint. Veracruz 300-600 A.D. Private collection. (Photo courtesy of the author.)

Fig. 20b. Sexless figure with distended abdomen. 16.5 cm high, brown. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Figures with enlarged penises (Fig. 21). The solid figure of the seated male below has a spout-like penis; in other words, it is not a hollow container with a spout. To a different category belong figures (not shown here) which are hollow, allowing for the penis to function as a spout if water is poured through the hole on top of the head. These latter figures are ascribed to the Pihuamo substyle on the border region of Colima and Jalisco. The thick penis is one of several constant attributes and therefore is not indicative of a pathological condition.[20]

Fig. 21. Solid male figure with tubular penis. 23 cm high, buff. Jalisco, Tuxcacuesco-Ortices type. Private collection. (Photo courtesy of Sidney Newman.)

Phallic figures (Fig. 22). Some people consider a figure with a huge phallus to be an amusing collector's item. This interest may account for the large number of forgeries.[21] The Colima figure shown here, however, definitely is genuine. It has a spout in back of the head with large bracelets and anklets indicative of rank. Phallic figures are restricted to Colima.

Fig. 22. Phallic figure, circumcised. 29 cm high, red and brown. Colima. Private collection. (Photo courtesy of the author.)

Figures possibly indicative of steatopygia (Fig. 23). An excessive development of fat on the buttocks, especially in females, is most common among the Hottentots and some other peoples. Protruding buttocks occur occasionally in Nayarit figures. A pathological feature seems to be portrayed in the figure shown here. Thick legs and thick, cusped feet are style characteristics and also enable the figure to stand freely.

Fig. 23. Female with steatopygia, cusped feet. 76 cm high, white and black on red. Nayarit. Collection in Southwest Museum, Los Angeles. (Photo courtesy of Sidney Newman.)

Emaciated figures with exposed ribs (Fig. 24). Such representations are restricted to Nayarit figures, which also occur as male-female pairs, sometimes found together in the same tomb. This female has obviously protruding ribs and spine.

Fig. 24. Emaciated female with protruding ribs and spine. 20 cm high, black and white on red. Nayarit. Collection in Southwest Museum, Los Angeles. (Photo courtesy of Sidney Newman.)

Figures covered with pustules (Fig. 25). This Chinesca female, who may be pregnant, suffers from yaws, has a hump and a tumor on the back. She holds a jar on the right shoulder. The pustules are carefully notched, but they do not cover the face or the arms. (In fact, they resemble representations of the native *peyote* cactus.) Other individuals with pustules on their bodies have been shown scratching their buttocks to relieve itching.[22]

Fig. 25. Kneeling female with pustules (except on face and arms), distended abdomen and small hump below neck. 27.5 cm high, red and black on buff. Chinesca style of Nayarit. Private collection. (Photo courtesy of the author.)

Figures exhibiting miscellaneous symptoms (Fig. 26). The drummer, a Nayarit figure wearing an animal skin on his head, has been diagnosed as suffering from Hurley's syndrome according to Eli Cohen (Fig. 26a). Among the symptoms that are recognizable in this figure are cranial enlargement, coarse facies with full lips, flared nostrils, and a low nasal bridge. On the next page, a Colima woman with a wrinkled face (due to age or pain?) carries a waterjar with a ladle on top. She seems to have trouble with her lower back (Fig. 26b). The hand position helps her with her load.

Fig. 26a. Male drummer with coarse facies, flared nostrils, low nasal bridge (possibly indicative of Hurley's syndrome). 13.5 cm high, white on red. Nayarit. Private collection. (Photo courtesy of the author.)

Fig. 26b. Aged female who seems to have back pain; evidence of saber shin on both legs. 38.5 cm high, traces of yellow on red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Figures in birth-giving positions (Fig. 27). Indications of advanced pregnancy are included here mainly because of the fertility connotations which played an important role in Pre-Hispanic cultures. Small solid figures from the Valley of Mexico (c.1200-600 B.C.) show this condition occasionally. The native position when giving birth is to kneel and extend the toes to the ground, as exemplified here.

Fig. 27. Woman kneeling in birth-giving position. 37 cm high, traces of white on black. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

Figures showing patients on sickbeds (Fig. 28). A class of figurines showing an individual lying on the back strapped to a couch—which I designated as "bed figures" for short—is indicative of an interesting cultural trait because these figurines occur in fair numbers in West Mexico and with less frequency in the Valley of Mexico, in Veracruz and, surprisingly, in Ecuador. The occurrences of the Ecuadorian figures have first been compared with those from Mexico by Henri Lehmann[23] and indicate the far-flung trade connections along the Pacific sea route. Some of the Mexican figures are cradles with infants, while others depict adults—mostly females. The period ranges from 800 B.C. to 1521 A.D. In the shaft tomb complex of West Mexico, bed figures represent almost exclusively females lying on slabs (occasionally with four small supports) with bolsters on each side of the heads and several straps (bands of clay) covering torsos and arms. Thus each figure is securely fastened to its slab. I have suggested that these figures represent females who died in childbirth and were laid out for a ceremony similar to that accorded Aztec women prior to entombment.[24] Considering the depth of the vertical shaft (between 1.50 meters and 9 meters) and a narrow tunnel (0.70 to 3 meters long) which leads to the vaulted burial chamber, it seems logical to conclude that strapping the corpse to a pallet would be the proper ceremonial way to lay the dead to rest.

It is important to note that my discussion here is confined to a special and quite rare kind of bed figures—those associated with the sick. (The Pre-Columbian people in Mesoamerica ordinarily did not sleep in beds but on straw mats on the floor). Some of these sickbeds have two layers of slats, or clay rods (Fig. 28a). Abner Weisman called these "hospital beds," and stated that they "have special facilities for bowel and bladder incontinence."[25] Other sickbed figurines include persons who by their appearance are attending these patients, although no obvious illness symptoms are noticeable.[26] Sickbeds with an effluvial opening apparently are comparable to sickbeds for cholera patients in India.

Bed figures from Veracruz (700-900 A.D.) are quite different and involve a different concept. They represent smiling-faced figures laid out on one- or two-tiered platforms with bolsters below the legs to prop them up high (Fig. 28b). Intoxication was brought about by means of *pulque* clysters. The fermented juice of the agave plant, *pulque,* was administered by enema to produce a trancelike state.

Fig. 28a. Sexless figure on double-layer slat bed with attendant. 20 cm long, yellow-on-red. Nayarit. Private collection. (Photo courtesy of the author.)

This alcoholic beverage was considered a "magic medicine," causing hallucinations which supposedly enabled communications with the gods. There is an interesting passage in a sixteenth-century chronicle which in translation reveals that in the province of Panuco (northern Veracruz) the men were great sodomites, cowards and so drunk that, "tired of not being able to drink more wine [*pulque*], they lie down and raise their legs so that the wine can be passed through a canula inserted in the anus until the body is full."[27] Such canulas of terra-cotta have been found in archaeological contexts. Doubtlessly, the Spaniard who wrote this report did not understand the underlying ritual purpose of the procedure and ascribed it to the moral decadence of the population.

Representations of actual curing practices for the relief of pain are rare. A mural of great complexity at Teotihuacan (the Tepantitla "Medicine Mural," c. 600 A.D.) has been interpreted by J. Angulo[28] as being representative of Classic period curing practices (Fig. 32 on p. 60). Various groups of two interacting figures seem to indicate tooth mutilation (a practice confirmed archaeologically by finds of notched or jade-incrusted teeth for cosmetic purposes); a person perhaps being circumcised; another figure giving some kind of treatment by rubbing the patient's head; and one figure lying on a mat, accompanied by an attendant. A more plausible reinterpretation of the scenes is given by Esther Pasztory,[29] who includes a review of pre-Columbian curing practices recorded for the period preceding the Spanish Conquest in the *Florentine Codex*.

Depictions in the pictorial manuscripts include scenes which must not be regarded as curative interventions, but rather which must be considered in their ritual context. For instance, the piercing of the side of the nose for the purpose of inserting a precious rod was a ceremonial performance establishing a king's rights to rule.

Figures displaying pathological symptoms in Mayan art (Figs. 29 and 30). Maya civilization flourished not only in southeastern Mexico (Yucatan Peninsula and Chiapas) but also in Guatemala, Belize and parts of El Salvador and of Honduras. These observations are confined to the Mexican area, where a large number of fine hand-modeled and mold-made figurines were discovered at the necropolises on the island of Jaina and adjacents sites (600-1000 A.D.). Some of them are superb masterpieces and a few include representations of hunchbacks and, rarely, ailments of the eye and the face.

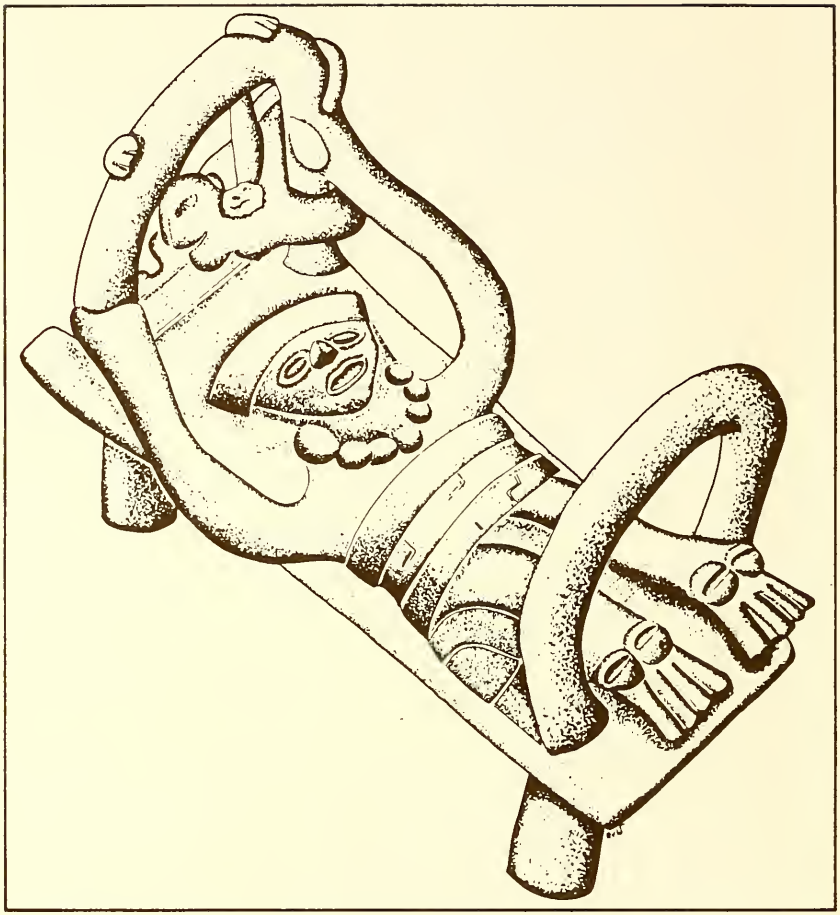


Fig. 28b. Smiling face type figure lying on a bed with legs raised to be given a pulque clyster. The monkey on the loop symbolizes this intoxicating beverage. 28 cm long, buff. Veracruz, 600-900 A.D. (After von Winning 1972, fig. 2.)

Fig. 29. Male beating a drum has a sunken nose bridge. 15 cm high, buff. Late Classic Maya, Jaina, c. 800-900 A.D. Private collection. (Photo courtesy of Museum für Völkerkunde, Munich, and Stendahl Galleries, Los Angeles.)

Dwarfs and hunchbacks were frequently depicted in Mayan art on ceramic figures, low relief sculptures, carved jade plaques and polychrome vases. This topic has been amply discussed by Marta Foncerrada de Molina.[30] She points out the differences in the figuration between dwarfs and children. Recently Virginia E. Miller presented further examples.[31] In the figure shown below, the entire face shows a rough and pitted surface, which may be indicative of a skin overlay or an illness, inasmuch as the nose has an unnatural shape (Fig. 30a). The fine figurine on the facing page is actually a whistle (Fig. 30b).

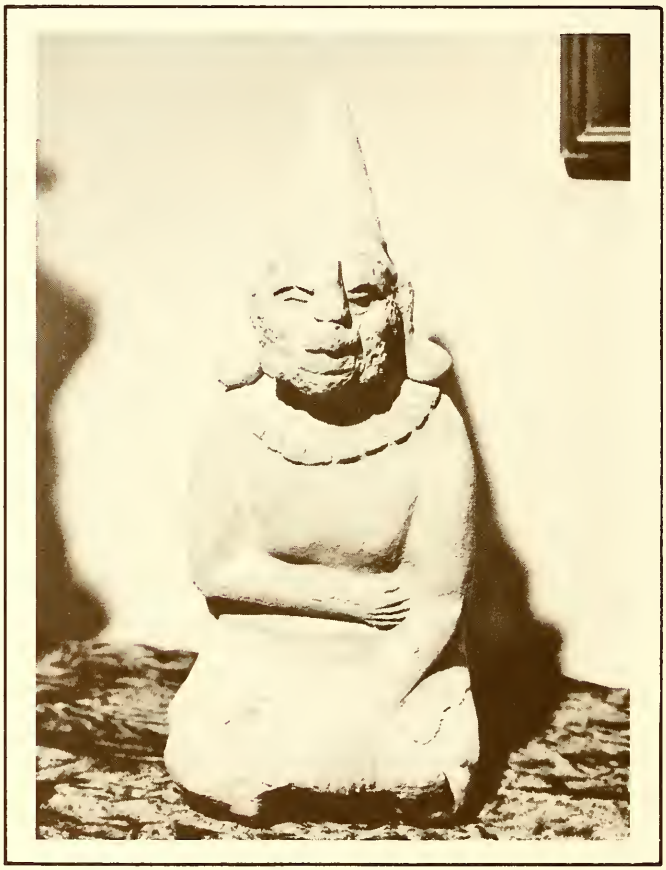


Fig. 30a. Male with rough and pitted face. 15 cm high, buff. Jaina. Private collection. (Photo courtesy of the author.)

Fig. 30b. Whistle figure of a dwarf with protruding chest. 16.5 cm high, red with traces of yellow. Jaina. Private collection. (Photo courtesy of Museum für Völkerkunde, Munich, and Stendahl Galleries, Los Angeles.)

Figures with seemingly abnormal features depicting style pecularities (Fig. 31). The medical diagnostician, seeing symptoms in figurations that appear abnormal, must be aware of stylistic developments and iconographic deity attributes. Attention has already been drawn to Nayarit figures with thick legs and large cusped feet or disproportionately thin arms and the lack of feet. In the first example shown here, the patch on the cheek of this Classic Veracruz figure possibly was a piece of human skin taken from the thigh of a sacrificial victim and probably does not indicate disease of the face (Fig. 31a). Opposite is a good example of how well an artist could adhere to stylistic canons of the day. This female exhibits prominently exaggerated features (Fig. 31b).

Fig. 31a. Figure head with (human?) skin patch on left cheek. 19 cm. high, buff. Veracruz, 600-800 A.D. Private collection. (Photo courtesy of the author.)

Fig. 31b. Female with exaggerated features which are style characteristics, not pathological symptoms. 39.5 cm. high, red and white on buff. Nayarit. Private collection. (Photo courtesy of Sidney Newman.)

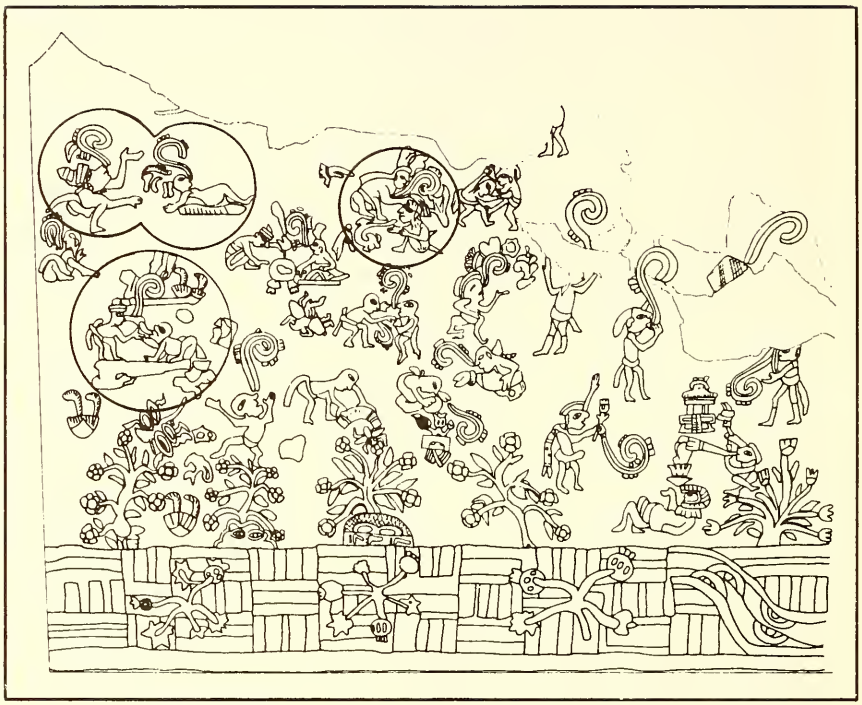


Fig. 32. Section from a mural painting allegedly showing curing practices (in circles). (Teotihuacan, Tepantitla "Medicine Mural," after Pasztory 1976, fig. 42.)

Various opinions have been expressed on the significance of the so-called "Danzante" reliefs at Monte Albán (Oaxaca), dating from approximately 500 B.C. to 200 A.D. Since some of the interpretations are quite ludicrous, I cite the observations of Dr. Gerhard Baer, Director of the Ethnological Museum of Basle, who summarizes the evidence:

> . . . Of the various possible interpretations there are two conflicting ones that are particularly plausible:
>
> > (1) The figures, shown with closed eyes, are participating in a ritual dance and other ritual acts; the dancers are in a state of intoxication produced by consumption of narcotics (fungi perhaps, or alcohol?). The persons depicted are probably priests, magicians, or shamans.
> >
> > (2) The other interpretation is that the reliefs portray priests, magicians or shamans after their death, dancing and performing ritual acts (presumably for the welfare of the living). This second interpretation is preferred. The danzante reliefs are associated with a calendar and writing system which is still considered to be the oldest in Mesoamerica. Some of the dates shown on the reliefs are probably identical with the names of the "dancers" represented.[32]

* * *

To summarize briefly, this overview is confined mainly to portrayals of different kinds of illnesses and abnormalities on ceramic sculptures because they are more abundant than depictions in other media and their three-dimensional aspects allow closer scrutiny. Ancient potters were accomplished artists and keen observers of nature. Nevertheless, they were bound to conventions and modeled the human figure in terms of their world view. Their motivation was to create offerings to accompany the dead on their journey to the underworld. Curiosity in unnatural conditions induced them to portray illnesses and abnormalities, the causes of which were shrouded in mysticism, since such afflictions were sent by their gods.

Fig. 33. Female with closed eyes, places left hand on right shoulder. 25.5 cm high, red and brown; large venthole in left ear. Colima. Private collection. (Photo courtesy of the author.)

NOTES

1. Fray Bernardino de Sahagún, *Florentine Codex. General History of the Things of New Spain,* Book 10, trans. C.E. Dibble and A.O. Anderson (Santa Fe: Monographs of The School of American Research and The Museum of New Mexico, No. 14, Part XI, 1961).

2. *Ibid.*

3. Martín de la Cruz, *Libellus de medicinalibus indorum herbis, 1552,* trans. Juan Badiano. Spanish version by various authors (Mexico City: Instituto Mexicano del Seguro Social, 1964). The original of this work is now in the Vatican Library.

4. Francisco Hernández, *Historia natural de Nueva España,* 4 vols. (Mexico City: Universidad Nacional Autónoma de México, 1959-1967).

5. My source for this work is Michael D. Coe and Gordon Whittaker, trans. and eds., *Aztec Sorcerers in Seventeenth-Century Mexico: The Treatise on Superstitions by Hernándo Ruiz de Alarcon* (Albany: Institute for Mesoamerican Studies, Publication No. 7, State University of New York at Albany, 1982). Another good translation from Náhuatl was done two years later by Richard J. Andrews and Ross Hassig, trans. and eds., *Treatise on the Heathen Superstitions that Today Live Among the Indians Native to this New Spain, 1629* (Norman: University of Oklahoma Press, 1984).

6. Sahagún, *Florentine Codex,* Book 10, pp. 29-31.

7. Alonso de Molina, *Vocabulario en lengua castellano y Mexicana* (Madrid: Ediciones Cultura Hispánica, 1944), p. 113.

8. Sahagún, *Florentine Codex,* Book 10, pp. 139-163.

9. Coe and Whittaker, *Aztec Sorcerers,* p. 39.

10. Francis Robicsek, *The Smoking Gods: Tobacco in Maya Art, History and Religion* (Norman: University of Oklahoma Press, 1978), p. 38.

11. Coe and Whittaker, *Aztec Sorcerers,* pp. 34-35.

12. Sigvald Linné. "Humpbacks in Ancient America," *Ethnos,* vol. 4 (Stockholm: Statens Etnografiska Museum, 1943), pp. 169 and 182.

13. This reference is to different codices. The *Codex Borgia* is a thirteenth- or fourteenth-century manuscript now in the Biblioteca Apostolica at the Vatican. The *Codex Fejérvary-Mayer* is located in the City of Liverpool Museum, Liverpool, England. The *Codex Vaticanus B,* also from the thirteenth or fourteenth century, is housed at the Vatican, too.

14. Franz Termer, "Observaciones etnológicas acerca de los ojos entre los antiguos Mexicanos y los Mayas," Mexico. El México Antiguo IX (1959), pp. 245-253.

15. Abner Weisman, M.D. *The Weisman Collection of Pre-Columbian Medical Sculpture* (Bethesda: U. S. Government Printing Office, Public Health Service Publication No. 1539, 1966), p. 6. See in particular figures 28-33 in this work.

16. Hasso von Winning, *The Shaft Tomb Figures of West Mexico* (Los Angeles: Southwest Museum, Paper 24, 1974), p. 57.

17. See figure 35 in *Arte Precolombino del Occidente de México* (Mexico City: Secretaría de Educación Pública, 1946), [unpaginated]. See also figure 288 (a male and female pair) in Hasso von Winning, *Shaft Tomb Figures,* p. 167.

18. Eduardo Matos Moctezuma, "Parálisis Facial Prehispánica," *Departamento de Investigaciones Antropológicas, Publicacion 25* (Mexico City: Instituto Nacional de Antropologia e Historia, 1970).

19. Esther Pasztory, *The Murals of Tepantitla, Teotihuacan* (New York: Garland Publishing, Inc., 1967), p. 244.

20. Hasso von Winning, *Shaft Tomb Figures,* pp. 74-75.

21. Forgeries are recognizable to the trained eye by their surface finish (e.g. black manganese deposits are indicated by black paint), coarse features and other iconographic inconsistencies.

22. See in particular figure 43 in *Sculpture of Ancient West Mexico, Nayarit, Jalisco, Colima.* The Proctor Stafford Collection (Los Angeles: Los Angeles County Museum of Art, July 7-August 30, 1970).

23. Henri Lehmann, "Le personage couché sur le dos: sujet comun dans l'archéologie du Méxique et de l'Equateur." *Selected Papers XXIX International Congress of Americanists* (Chicago: University of Chicago, 1951).

24. Hasso von Winning and Olga Hammer, *Anecdotal Sculpture of Ancient West Mexico* (Los Angeles: An Ethnic Arts Publication, Natural History Museum of Los Angeles County, 1972), pp. 31-41.

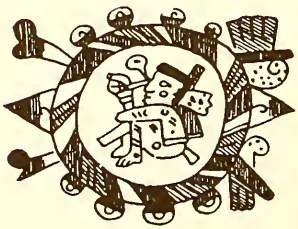
Fig. 34. Effigy of a swollen foot. Vases in the shape of a normal foot are known from Colima and Nayarit. This portrayal may represent gout. Buff with residues of white. West Mexico. Kozma Collection, The Pearson Museum. (Photo courtesy of The Pearson Museum.)

a. Borgia 42

b. Fej. M. 24

c. Borgia 43

d. Borgia 15



e. Vat. 93

Fig. 35. Extruded eye and ritual eye excision with a bone dagger in deity representations in Pre-Hispanic pictorial manuscripts. Figs. 35a, c, and d are from the Codex Borgia. Fig. 35b is from the Codex Fejérváry Mayer. Fig. 35e is from Codex Vaticanus B.

25. Abner J. Weisman, M.D., *Weisman Collection,* pp. 14-15. The author illustrated five examples from Nayarit the only region in which they occur.

26. Hasso von Winning and Olga Hammer, *Anecdotal Sculpture,* figs. 193-205, pp. 94-95.

27. Conquistador Anónimo, *Relación de Algunas Cosas de la Nueva Espana . . . Escrita por un Compañero de Hernán Cortes* (Mexico: Editorial América, 1941), p. 37.

28. J. Ángulo. *Teotihuacan: un autoretrato cultural.* [master's thesis], (Mexico City: Instituto Nacional de Antropología e Historia, 1964), p. 46.

29. Esther Pasztory, *Murals,* pp. 214-218.

30. Marta Foncerrada de Molina, "El enano en la plástica maya," *Anales del Instituto de Investigaciones Estéticas 13* (1976): pp. 45-57.

31. Virginia Miller, "The Dwarf Motif in Classic Mayan Art," in Elizabeth P. Benson, ed., *Fourth Palenque Round Table, 1980* (San Francisco: The Pre-Columbian Art Research Institute, 1985).

32. Gerhard Baer, *The Dancers of Monte Albán, Mexico, Sandoz Bulletin No. 9* (Basel: Sandoz Ltd., 1967), p. 25.

BIBLIOGRAPHY

Andrews, J. Richard and Ross, Hassig, trans. and eds. *Treatise on the Heathen Superstitions that Today Live Among the Indians Native to this New Spain, 1629* (Norman: University of Oklahoma Press, 1984).

Ángulo, J. Teotihuacan: un autoretrato cultural. [master's thesis]. Mexico City: Instituto Nacional de Antropología e Historia, 1964.

Arte precolombino del occidente de México (Mexico City: Secretaría de Educación Pública, 1946).

"Badiano Herbal": *Libellus de medicinalibus indorum herbis.* By Martín de la Cruz, translated into Latin by Juan Badiano. Spanish version by various authors. (Mexico City: Instituto Mexicano del Seguro Social, 1964).

Baer, Gerhard. "The Dancers of Monte Alban, Mexico." *Sandoz Bulletin* No. 9 (Basel: Sandoz Ltd., 1967).

Cabot, Richard C. and Adams, F. Dennette. *Physical Diagnosis,* 13th ed. (Baltimore: Williams & Wilkins, 1942).

Codices (Facsimile Editions)

Codex Borgia. Ms. at the Biblioteca Apostolica in the Vatican. Thirteenth or fourteenth century. Reproduction 1976.

Fejérváry-Mayer Mexican Pictorial Manuscript. Original in City of Liverpool Museum, England. Reproduction 1971.

Vaticanus 3773 (Vaticanus B). Thirteenth or fourteenth century. Reproduction 1972. All by Akademische Druck- und Verlagsanstalt, Graz, Austria.

Codex Nuttall (or Zouche-Nuttall). Completed c. 1355. Facsimile Peabody Museum of American Archaeology and Ethnology, Harvard University. Cambridge 1902.

Coe, Michael D. and Gordon Whittaker, trans. and eds. *Aztec Sorcerers in Seventeenth-Century Mexico: The Treatise on Superstitions by Hernando Ruiz de Alarcón.* Institute for Mesoamerican Studies, Publication No. 7 (Albany: State University of New York at Albany, 1982).

Conquistador Anónimo. Relación de algunas cosas de la Nueva Espana . . . escrita por un compañero de Hernán Cortés (Mexico City: Editorial America, 1941).

Coury, Charles. *La médecine de l'Amerique precolombienne* (Paris: Les Editions Roger Dacosta, 1969).

Foncerrada de Molina, Marta. "El enano en la plastica maya." *Anales del Instituto de Investigaciones Esteticas,* vol. 13, no. 45. (Mexico City: Universidad Nacional Autonoma de Mexico, 1976).

Hernández, Francisco. *Historia natural de Nueva España.* 4 vols. (Mexico City: Universidad Nacional Autónoma de México, 1959-1967).

Lehmann, Henri. "Le personage couché sur le dos: Sujet comun dans l'archeologie du Méxique et de L'Equateur." *Selected Papers XXIX International Congress of Americanists.* (Chicago: University of Chicago, 1951).

Linné, Sigvald. "Humpbacks in Ancient America." *Ethnos,* vol. 4. (Stockholm: Statens Etnografiska Museum, 1943).

Lothrop, Samuel K. *Robert W. Bliss Collection: Pre-Columbian Art* The Collection at Dumbarton Oaks, Washington. (New York: Phaidon Publications, 1957).

Martínez Durán, C. "La cirugía de los mayas." *Abbottempo* (Spanish ed.) vol.1, no. 4. (Chicago: Abbott Co., 1963).

Matos Moctezuma, Eduardo. "Parálisis facial prehispánica." *Departamento de Investigaciones Antropológicas, Publicación* 25 (Mexico City: Instituto Nacional de Antropología e Historia, 1976).

Miller, Virginia. "The Dwarf Motif in Classic Mayan Art," in Elizabeth P. Benson, ed., *Fourth Palenque Round Table, 1980* (San Francisco: The Pre-Columbian Art Research Institute, 1985).

Molina, Alonso de. *Vocabulario en lengua castellana y mexicana* (Madrid: Ediciones Cultura Hispánica, 1944).

Nicholson, Henry B. "Religion in Pre-Hispanic Central Mexico," in *Handbook of Middle American Indians,* vol. 10 (Austin: University of Texas Press, 1971).

Pasztory, Esther. *The Murals of Tepantitla, Teotihuacan* (New York: Garland Publishing, Inc., 1976).

Piña Chan, Román. *Mesoamérica, ensayo histórico cultural.* Memorias VI (Mexico City: Instituto Nacional de Antropología e Historia, 1960).

Robicsek, Francis. *The Smoking Gods: Tobacco in Mayan Art, History and Religion* (Norman: University of Oklahoma Press, 1978).

Sahagún, Fray Bernardino de. *Florentine Codex. General History of the Things of New Spain.* Translated from the Aztec into English by C. E. Dibble and A. O. Anderson. Book 10, *The People.* (Santa Fe: Monographs of The School of American Research and The Museum of New Mexico, No. 14, Part XI, 1961).

Séjourné, Laurette. *Burning Water, Thought and Religion in Ancient Mexico* (New York: Thames and Hudson, 1956).

Termer, Franz. "Observaciones etnológicas acerca de los ojos entre los antiguos mexicanos y los mayas." Mexico City: *El México Antiguo* IX (1959).

Tozzer, Alfred M. *Landa's Relación de las Cosas de Yucatan, a Translation.* Papers of the Peabody Museum of American Archaeology and Ethnology, vol. XVIII (Cambridge: Harvard University, 1941).

von Winning, Hasso. *Pre-Columbian Art of Mexico and Central America* (New York: Abrams, 1968).

von Winning, Hasso. "Mexican Figurines Attached to Pallets and Cradles," *Atti del XL Congresso Internazionale degli Americanisti,* vol. 1, Rome, 1972 (Genova: Casa Editrice Tilgher, 1973).

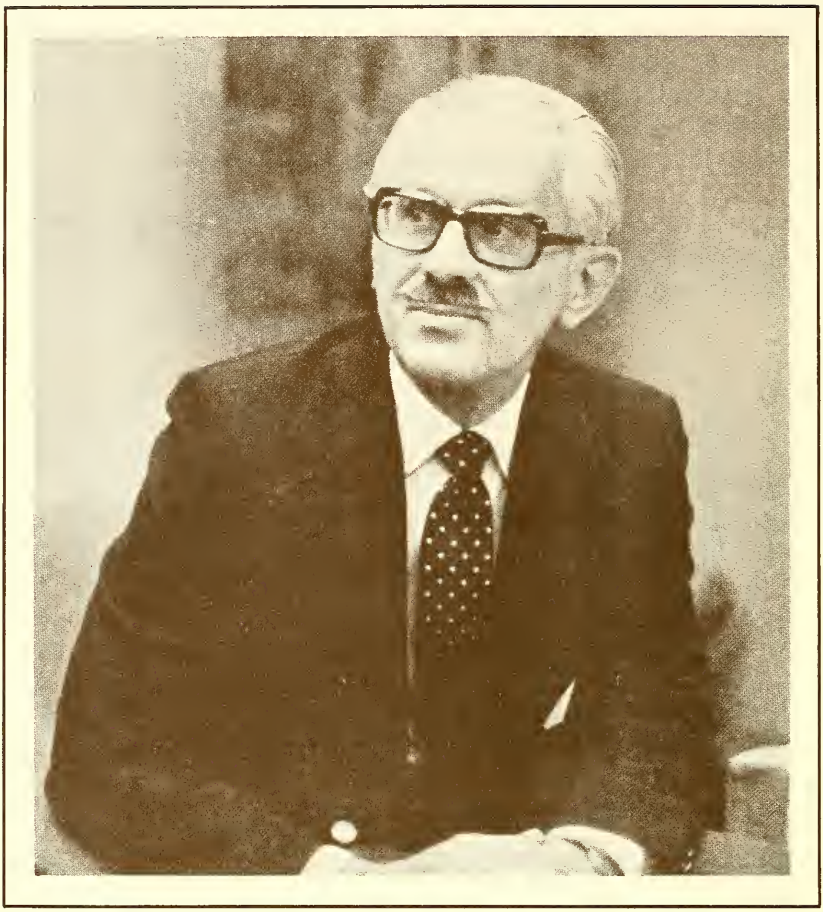
Weisman, Abner. *The Weisman Collection of Pre-Columbian Medical Sculpture.* Public Health Service Publication no. 1539 (Bethesda: U.S. Government Printing Office, 1966).

EXHIBITS

Ancient Art of Veracruz. An Exhibit Sponsored by the Ethnic Arts Council of Los Angeles at the Los Angeles County Museum of Natural History, February 23—June 13, 1971.

Stafford Collection. *Sculpture of Ancient West Mexico, Nayarit, Jalisco, Colima.* The Proctor Stafford Collection. (Los Angeles: Los Angeles County Museum of Art, July 7—August 30, 1970.)

von Winning, Hasso and Olga Hammer. *Anecdotal Sculpture of Ancient West Mexico* (Los Angeles: An Ethnic Arts Publication and Exhibition at the Natural History Museum of Los Angeles, 1972).



Hasso von Winning studied archaeology and anthropology at the Escuela Nacional de Antropologia in Mexico City from 1942 to 1946. He went on to receive both his bachelor's and master's degrees from the University of Southern California, Los Angeles, in 1950 and 1952 respectively. Since 1960 Mr. von Winning has served as Consultant in Mesoamerican Archaeology at the Southwest Museum in Los Angeles. He currently is Guest Curator in Archaeology at the Bowers Museum in Santa Ana and Research Associate at the San Diego Museum of Man. Since 1961 Mr. von Winning also has been a contributing editor to the Library of Congress' *Handbook of Latin American Studies,* Archaeology of Mesoamerica Section. Other distinctions include his membership on the Board of Directors of the Ethnic Arts Council of Los Angeles and on the Advisory Committee for Pre-Columbian Studies at Dumbarton Oaks in Washington, D.C. He is listed in the National Directory of Latin Americanists published by the Library of Congress and is an active member in both the American and Mexican anthropological societies.

Fig. 36. Obese hunchback with closed eyes, which may be an indication of death. 40.5 cm high, red. Colima. Private collection. (Photo courtesy of Sidney Newman.)

Credits:

Hasso von Winning collection
Kozma Collection, The Pearson Museum
Museum für Völlkerkunde
Sidney Newman collection
Stendahl Galleries

Produced for the Department of Medical Humanities,
Southern Illinois University School of Medicine by the
Division of Biomedical Communications, Illustration
Debra Vaninger, Design
Bernie Hatcher, Linda Ragel, Beth Reynolds, Layout
Pat Baker, Typesetting